C N Beam

BRIEF PASSENGER CAR DATA

—1954—

"ETHYL"
(TRADE MARK)
ANTIKNOCK COMPOUND
ETHYL CORPORATION

ETHYL CORPORATION

BRIEF PASSENGER CAR DATA

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1954

ETHYL CORPORATION
100 Park Avenue
New York 17, New York

RESEARCH LABORATORIES

1600 West Eight Mile Road
Detroit 20, Michigan

2600 Cajon Road
San Bernardino, California

REGIONAL SALES OFFICES

100 Park Avenue, New York 17, N. Y.

310 South Michigan Ave., Chicago 4, Ill.

National Bank of Tulsa Bldg., Tulsa 3, Okla.

1141 Huntley Drive, Los Angeles 26, Calif.

In Canada: Ethyl Antiknock, Ltd., The Bank of Nova Scotia Bldg.
44 King Street West, Toronto 1, Canada

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NOTICE

The specifications and adjustments contained in this booklet have been compiled by the Technical Service Division of the Research Laboratories of the Ethyl Corporation from information supplied by manufacturers of motor cars, ignition apparatus, spark plugs, etc. None of this information represents the results of tests at the Research Laboratories of the Ethyl Corporation.

This information covers the essential characteristics, in ready reference form, of the 1954 passenger car models. It is correct at date of publication, but changes may be made from time to time by motor car manufacturers.

Data on horsepower, torque, compression pressure, etc., are that given by the manufacturer. Methods and technique of testing differ in various engineering departments, so these data are frequently not comparable for different makes of cars.

GENERAL NOTES

Valves

Valve tappet clearances are extremely important. Frequent checking of valve tappet clearances will add materially to the proper functioning and long life of valves. Clearances given on the specification sheets are for normal driving conditions. For heavy duty, such as heavy loads or high speed, it may be desirable to give additional clearance.

Spark Plugs

The spark plug installed and recommended by the factory is shown first in the specifications with the corresponding AC, Auto-Lite or Champion spark plug shown as an alternate. These plugs are designed for average driving conditions. For heavy duty or high speed driving, it may be necessary to use a colder plug in order to obtain satisfactory spark plug life. The necessity for a colder plug is indicated by rapid electrode wear and, in extreme cases, splitting and cracking away of the insulator.

It is sometimes necessary to change to a plug which is hotter than the factory equipment plug for very light service, especially in metropolitan areas. If an engine is not pumping oil and the ignition system is in good condition but the spark plug consistently fouls with excessive carbon deposit—the need for a hotter plug is indicated.

Periodic cleaning of spark plugs by means of an efficient spark plug cleaner is often advantageous.

Spark plug gaps should be set and maintained at factory setting. Pitted breaker points should be cleaned and, if badly pitted, replaced. Incorrectly set breaker points will affect ignition timing and ignition output.

Ignition Timing

Ignition timing is given in crankshaft degrees and is factory setting. Almost all distributors are provided with some type of adjustment enabling the ignition timing to be reset without disturbing the calibration of the distributor advance mechanism. Retarded ignition timing will eliminate or reduce detonation but will result in decreased performance and fuel economy. Also, in most cases, an ignition setting somewhat in advance of the factory setting will result in additional performance and economy, although such an ignition setting will require a fuel of higher antiknock value than the standard setting.

Carburetors

Carburetors should not be adjusted or jets changed except by qualified mechanics. Correct fuel (or float) levels are extremely important to satisfactory performance and fuel economy—factory specifications should be strictly maintained.

LIST OF ABBREVIATIONS

AA	Aluminum Alloy (cylinder heads & pistons)
AC	AC Spark Plug Division, GMC
Adv	Advance
AI	Aluminum Industries (valves)
AL	The Electric Auto-Lite Company
AMA	Automobile Manufacturers Association
ATC	After Top Center
BTC	Before Top Center
Bmep	Brake mean effective pressure
C	Cold (valve adjustment)
Car	Carter (carburetors)
Centrif	Centrifugal
Champ	Champion Spark Plug Company
Clr	Clearance
CNA	Chrome Nickel Alloy Iron
Comp Press	Compression Pressure
DD	Downdraft
Deg	Degrees
Dup	Duplex
Eaton	Eaton Mfg. Company (valves)
Eng	Engine
Eqpt	Equipment
Exh	Exhaust
F	F-head
H	Hot (valve adjustment)
HP	Horsepower
Hyp	Hypoid (rear axle gearing)
Hyd Lifters	Hydraulic Lifters
I	In-head (overhead valves)
Int	Intake
L	L-head
Max	Maximum
Mech Lifters	Mechanical Lifters
No. Cyl	Number of Cylinders
OD	Overdrive
Recm Press	Recommended Pressure (tires)
Rich	Rich Manufacturing Company (valves)
RP	Rochester Products (carburetors)
RE	Replaceable Element (oil filter)
RU	Replaceable Unit (oil filter)
SB	Spiral Bevel
SD	Side Draft
Sil	Silchrome
Sgl	Single
Std	Standard
Strom	Stromberg Carburetor Company
TDC	Top Dead Center
TP	Thompson Products, Inc. (valves)
Trans	Transmission
Vac	Vacuum

SUMMARY OF CHARACTERISTICS

1954 UNITED STATES PASSENGER CARS

	1953	1954	Change
Number of Makes	19	19	....
Number of Models	54	55	+1
ENGINE CHARACTERISTICS:			
Average Standard Compression Ratio	7.44	7.64	+0.20
Average Optional Higher Compression Ratio	7.37	7.60	+0.23
No. of Optional Higher Compression Ratios	9	5	—4
Highest Standard Compression Ratio	8.50	8.70	+0.20
Lowest Standard Compression Ratio	6.70	6.80	+0.10
Highest Optional Compression Ratio	8.00	8.00	....
Average Displacement, Cubic Inches	256.6	267.1	+10.5
Average Maximum Brake Horsepower	133.0	150.8	+17.8
Average RPM at Maximum Horsepower	3861	4015	+154
Average Horsepower Per Cubic Inch	0.512	0.555	+0.043
Average Brake Mean Effective Pressure, PSI	130.7	133.7	+3.0
Maximum Horsepower Per Cubic Inch	0.634	0.709	+0.075
Minimum Horsepower Per Cubic Inch	0.438	0.449	+0.011
Average lb/HP—6 Passenger Sedan	27.06	24.88	—2.18
Rated Horsepower With Standard Compression Ratio:		Number of Models	
Under 75	1	1	....
75-99	7	5	—2
100-149	28	21	—7
150-199	14	15	+1
200-250	4	11	+7
Piston Materials:		Number of Models	
Aluminum Alloy	53	53	....
Cast Iron or Steel Alloy	1	2	+1

CAR MODEL	Special Series 40 Syncromesh	Special Series 40 Dynaflow	Century Series 60 Dynaflow and Syncromesh
ENGINE			
No. Cyl-Head Type	V-8-I	V-8-I	V-8-I
Bore and Stroke (in)	3.625x3.20	3.625x3.20	4.00x3.20
Displacement (cu in)	264	264	322
AMA Horsepower	42.05	42.05	51.2
Max Horsepower @ rpm	143 @ 4200	150 @ 4200	200 @ 4100(1)
Max Torque, lb-ft @ rpm	228 @ 2400	240 @ 2400	309 @ 2400(1)
Max bmep, lb/sq in	130.2	137.1	144.7(1)
Head Material	Cast Iron	Cast Iron	Cast Iron
Compression Ratio	7.2	8.1	8.5(1)
Piston Material	AA	AA	AA
Bearing Material	Steel Backed Durex		
IGNITION			
Spark Plug—Factory Eqpt	AC 44-5	AC 44-5	AC 44-5
Alternate	Champion J-8, AL A5 or AR5		
Spark Plug Gap	.030" to .035"		
Breaker Gap	.0125" to .0175"		
Cam Angle			
Firing Order	1-2-7-8-4-5-6-3		
Timing—Crankshaft Degrees	5° BTC	5° BTC	5° BTC
Adv Deg—Centrif—Vac	24-21	24-21	24-21
Adv Begins—Ends—Eng rpm	600-3500	600-3500	600-3500
Battery—Volts, Terminal Ground	12, Negative	12, Negative	12, Negative
VALVES			
Make and Material Int	Various 3140	Various 3140	Various 3140
Exh	Various 21-4NS or 2155N		
Tappet Clr—Seat Angle Int	Hydraulic Lifters, 45°		
Exh	Hydraulic Lifters, 45°		
Exhaust Seat Inserts	None	None	None
CARBURETOR			
Make, Model	(2)	(2)	(3)
Type	Dual DD	Dual DD	4 Barrel DD
Float Level	(4)	(4)	(5)
Choke Control	Automatic	Automatic	Automatic
CAPACITY			
Oil (qt)	6 refill	6 refill	6 refill
Water (qt)	16.5(6)	18.5(6)	(7)
Transmission (pt)	1-3/4	20	(8)
Rear Axle (pt)	4-1/2	4-1/2	4-1/2
Gasoline (gal)	19	19	19
GENERAL DATA (Four-Door Sedan)			
Wheelbase (in)	122	122	122
Over All Lgth Incl Bumpers (in)	206.3	206.3	206.3
Shipping Weight (lb)	3714	3816	3786(9)
Tire Size—Recm Press (lb)		7.60x15-24-24	
Rear Axle Ratio—Type	3.9 Hyp	3.6 Hyp	3.9 Hyp(10)
LOCATION CHASSIS SERIAL NO.	Left Front Door Pillar Post		

(1) Data given for Dynaflow equipped cars—with Syncromesh transmission compression is 8.0; max HP, 195 @ 4100; max torque, 302 @ 2400; max BMEP, 141.4.
(2) Stromberg AAVB-267 or Carter WCD.
(3) Stromberg 4 AUVB-267 or Carter WCFB.
(4) Stromberg: 5/64" above ends of gauge T-24971 to bottom edge of float. Carter: cover flange to float 15/64".
(5) Stromberg: air horn gasket to float, primary 5/64"; secondary 1/16". Carter: cover flange to float, primary 1/8"; secondary 3/16".
(6) 1-1/2 quart additional with heater.
(7) 16-1/2 quarts with Syncromesh transmission—18-1/2 quarts with Dynaflow. Heater requires 1-1/2 quart additional.
(8) 2-1/2 pints for Syncromesh—Dynaflow requires 10 quarts.
(9) 3888 with Dynaflow.
(10) 3.4 with Dynaflow.

CAR MODEL	Super Series 50 Syncromesh	Super Series 50 Dynaflow	Roadmaster Series 70 Dynaflow
ENGINE			
No. Cyl-Head Type	V-8-I	V-8-I	V-8-I
Bore and Stroke (in)	4.00x3.20	4.00x3.20	4.00x3.20
Displacement (cu in)	322	322	322
AMA Horsepower	51.2	51.2	51.2
Max Horsepower @ rpm	177 @ 4100	182 @ 4100	200 @ 4100
Max Torque, lb-ft @ rpm	295 @ 2000	300 @ 2000	309 @ 2400
Max bmep, lb/sq in	138.2	140.6	144.7
Head Material	Cast Iron	Cast Iron	Cast Iron
Compression Ratio	8.0	8.5	8.5
Piston Material	AA	AA	AA
Bearing Material	Steel Backed Durex		
IGNITION			
Spark Plug—Factory Eqpt	AC 44-5	AC 44-5	AC 44-5
Alternate	Champion J-8, AL A5 or AR5		
Spark Plug Gap	.030" to .035"		
Breaker Gap	.0125" to .0175"		
Cam Angle			
Firing Order	1-2-7-8-4-5-6-3		
Timing—Crankshaft Degrees	5° BTC	5° BTC	5° BTC
Adv Deg—Centrif—Vac	24-21	24-21	24-21
Adv Begins—Ends—Eng rpm	600-3500	600-3500	600-3500
Battery—Volts, Terminal Ground	12, Negative	12, Negative	12, Negative
VALVES			
Make and Material Int	Various 3140	Various 3140	Various 3140
Exh	Various 21-4NS or 2155N		
Tappet Clr—Seat Angle Int	Hydraulic Lifters, 45°		
Exh	Hydraulic Lifters, 45°		
Exhaust Seat Inserts	None	None	None
CARBURETOR			
Make, Model	(1)	(1)	(2)
Type	Dual DD	Dual DD	4 Barrel DD
Float Level	(3)	(3)	(4)
Choke Control	Automatic	Automatic	Automatic
CAPACITY			
Oil (qt)	6 refill	6 refill	6 refill
Water (qt)	16.5(5)	18.5(5)	18.5(5)
Transmission (pt)	2-1/2	20	20
Rear Axle (pt)	4-1/2	4-1/2	4-1/2
Gasoline (gal)	19	19	19
GENERAL DATA (Four-Door Sedan)			
Wheelbase (in)	127	127	127
Over All Lgth Incl Bumpers (in)	216.8	216.8	216.8
Shipping Weight (lb)	4105	4207	4250
Tire Size—Recm Press (lb)	7.60x15-24-24		8.00x15-24-24
Rear Axle Ratio—Type	3.9 Hyp	3.4 Hyp	3.4 Hyp
LOCATION CHASSIS SERIAL NO.	Left Front Door Pillar Post		

(1) Stromberg AAVB-267 or Carter WCD.
(2) Stromberg 4AUVB-267 or Carter WCFB.
(3) Stromberg: 5/64" above ends of gauge T-24971 to bottom edge of float. Carter: cover flange to float 15/64".
(4) Stromberg: air horn gasket to float, primary 5/64", secondary 1/16". Carter: cover flange to float, primary 1/8", secondary 3/16".
(5) 1-1/2 quart additional with heater.

CADILLAC

CAR MODEL	62	60 Special	75
ENGINE			
No. Cyl-Head Type	V-8-I	V-8-I	V-8-I
Bore and Stroke (in)	3-13/16x3-5/8	3-13/16x3-5/8	3-13/16x3-5/8
Displacement (cu in)	331	331	331
AMA Horsepower	46.5	46.5	46.5
Max Horsepower @ rpm	230 @ 4400	230 @ 4400	230 @ 4400
Max Torque, lb-ft @ rpm	330 @ 2700	330 @ 2700	330 @ 2700
Max bmep, lb/sq in	150.2	150.2	150.2
Head Material	Cast Iron	Cast Iron	Cast Iron
Compression Ratio	8.25	8.25	8.25
Piston Material	AA	AA	AA
Bearing Material		Steel Backed Durex	
IGNITION			
Spark Plug—Factory Eqpt	AC 46-5	AC 46-5	AC 46-5
Alternate		AL A9 or AR8, Champ J-11	
Spark Plug Gap	.035"	.035"	.035"
Breaker Gap	.016"	.016"	.016"
Cam Angle	31° ± 1-1/2	31° ± 1-1/2	31° ± 1-1/2
Firing Order		1-8-4-3-6-5-7-2	
Timing—Crankshaft Degrees	2-1/2°BTC	2-1/2°BTC	2-1/2°BTC
Adv Deg—Centrif—Vac	24-1/2-27-1/2	24-1/2-27-1/2	24-1/2-27-1/2
Adv Begins—Ends—Eng rpm	900-4000	900-4000	900-4000
Battery—Volts, Terminal Ground	12, Negative	12, Negative	12, Negative
VALVES			
Make and Material Int		Rich 3140 or Eaton 8645	
Exh		Rich 2112N or Eaton Sil X-10	
Tappet Clr—Seat Angle Int		Hydraulic Lifters, 45°	
Exh		Hydraulic Lifters, 45°	
Exhaust Seat Inserts	None	None	None
CARBURETOR			
Make, Model		Carter WCFB 2109S or Rochester 4GC	
Type		DD 4 Barrel	
Float Level		Car Pri. 1/8", Sec. 3/16"; RP 1-19/32" (1)	
Choke Control	Automatic	Automatic	Automatic
CAPACITY			
Oil (qt)	5 Refill	5 Refill	5 Refill
Water (qt)	19-3/4	19-3/4	19-3/4
Transmission (pt)	22	22	22
Rear Axle (pt)	5	5	5
Gasoline (gal)	20	20	20
GENERAL DATA (Four-Door Sedan)			
Wheelbase (in)	129	133	149-4/5
Over All Lgth Incl Bumpers (in)	216.4	227.4 (2)	237.1
Shipping Weight (lb)	4370	4500	5055
Tire Size—Recm Press (lb)	8.00x15-24-24	8.20x15-28-28	
Rear Axle Ratio—Type	3.07 Hyp (3)	3.07 Hyp (3)	3.77

LOCATION CHASSIS SERIAL NO. Right Frame Sidebar, Behind Engine Bracket

(1) Carter: Distance between float and machined surface of bowl cover casting, bowl cover assembly inverted. Rochester: Distance between bottom of float and bowl cover gasket, bowl cover assembly inverted.
(2) Overall length of Coupes and Convertibles 223.4.
(3) 3.36 optional. 3.36 standard with air conditioning.

CAR MODEL	Bel Air Two-Ten One-Fifty Synchromesh	Bel Air Two-Ten One-Fifty Powerglide
ENGINE		
No. Cyl-Head Type	6-I	6-I
Bore and Stroke (in)	3-9/16x3-15/16	3-9/16x3-15/16
Displacement (cu in)	235.5	235.5
AMA Horsepower	30.4	30.4
Max Horsepower @ rpm	115 @ 3700	125 @ 4000
Max Torque, lb-ft @ rpm	200 @ 2000	200 @ 2000
Max bmep, lb/sq in	128.1	128.1
Head Material	Cast Alloy Iron	Cast Alloy Iron
Compression Ratio	7.5	7.5
Piston Material	Cast Alloy Aluminum	
Bearing Material	Steel Backed Babbitt	
IGNITION		
Spark Plug—Factory Eqpt	AC 44-5	AC 44-5
Alternate	(1)	(1)
Spark Plug Gap	.035"	.035"
Breaker Gap	.0125" to .0175" (Worn)	.0125" to .0175" (Worn)
Cam Angle	38° to 42°	38° to 42°
Firing Order	1-5-3-6-2-4	1-5-3-6-2-4
Timing—Crankshaft Degrees	2° ATC	2° ATC
Adv Deg—Centrif—Vac	26-17	26-17
Adv Begins—Ends—Eng rpm	600-3500	600-3500
Battery—Volts, Terminal Ground	6, Negative	6, Negative
VALVES		
Make and Material Int	Silchrome or Nickel Chrome Steel	
Exh	Chrome-Nickel Steel	
Tappet Clr—Seat Angle Int	.010"H (2)	Hyd Lifters (2)
Exh	.020"H (3)	Hyd Lifters (3)
Exhaust Seat Inserts	None	None
CARBURETOR		
Make, Model	RP 7005921	RP 7005922
Type	Sgl DD	Sgl DD
Float Level	1-5/16 (4)	1-5/16 (4)
Choke Control	Automatic	Automatic
CAPACITY		
Oil (qt)	5 Refill	5 Refill
Water (qt)	16 (5)	16 (5)
Transmission (pt)	1-1/2	20 Refill
Rear Axle (pt)	3-1/2	3-1/2
Gasoline (gal)	16	16
GENERAL DATA (Four-Door Sedan)		
Wheelbase (in)	115	115
Over All Lgth Incl Bumpers (in)	196.5	196.5
Shipping Weight (lb)	(6)	(7)
Tire Size—Recm Press (lb)	6.70x15-24-24	6.70x15-24-24
Rear Axle Ratio—Type	3.70 Hyp	3.55 Hyp
LOCATION CHASSIS SERIAL NO.	Left Front Body Hinge Pillar	

(1) Champion's recommendation is J-8; Auto-Lite's is A-5 or AR-5.
(2) Seat angle in cylinder head, 31°; valve face angle, 30°.
(3) Seat angle in cylinder head, 46°; valve face angle, 45°.
(4) Bottom of float to cover.
(5) One quart additional with heater.
(6) Bel Air 3255, Two-Ten 3230, One-Fifty 3210.
(7) Bel Air 3380, Two-Ten 3355, One-Fifty 3335.

CHRYSLER

CAR MODEL	Windsor De Luxe C-62	New Yorker C-63-1
ENGINE		
No. Cyl-Head Type	6-L	V-8-I
Bore and Stroke (in)	3-7/16x4-3/4	3-13/16x3-5/8
Displacement (cu in)	264.5	331.1
AMA Horsepower	28.36	46.51
Max Horsepower @ rpm	119 @ 3600	195 @ 4400
Max Torque, lb-ft @ rpm	218 @ 1600	320 @ 2000
Max bmep, lb/sq in	124	145.5
Head Material	Cast Iron	Cast Iron
Compression Ratio	7.0	7.5
Piston Material	AA	AA
Bearing Material	Steel Backed Babbitt	
IGNITION		
Spark Plug—Factory Eqpt	AL 4S-140	AL 4GS-150
Alternate	AC 45, Champ J-8	AC 45, Champ N-8B
Spark Plug Gap	.035"	.035"
Breaker Gap	.020"	.017"
Cam Angle	39° ± 3	32° to 36° (1)
Firing Order	1-5-3-6-2-4	1-8-4-3-6-5-7-2
Timing—Crankshaft Degrees	TDC	4° BTC
Adv Deg—Centrif—Vac	20-18	24-23
Adv Begins—Ends—Eng rpm	700-2850	775-4200
Battery—Volts, Terminal Ground	6, Positive	6, Positive
VALVES		
Make and Material ... Int	Silicon-Chromium Steel	
Exh	Silicon-Chromium Steel	
Tappet Clr—Seat Angle ... Int	.008" H, 45°	Hyd Lifters, 45°
Exh	.010" H, 45°	Hyd Lifters, 45°
Exhaust Seat Inserts	Yes	Yes
CARBURETOR		
Make, Model	B and B(Car)E9C1(2)	Car WCD-2039-SA
Type	Sgl DD	Dual DD
Float Level	5/64" (3)	11/64" (4)
Choke Control	Automatic	Automatic
CAPACITY		
Oil (qt)	5	5
Water (qt)	15	25
Transmission (pt)	2-3/4 (5)	24 Refill
Rear Axle (pt)	3-1/4	3-1/2
Gasoline (gal)	17	20
GENERAL DATA (Four-Door Sedan)		
Wheelbase (in)	125-1/2	125-1/2
Over All Lgth Incl Bumpers (in)	215-5/8	215-5/8
Shipping Weight (lb)	3685	3955
Tire Size—Recm Press (lb)	7.60x15-24-24	8.00x15-24-24
Rear Axle Ratio—Type	3.9 Hyp (6)	3.36 Hyp
LOCATION CHASSIS SERIAL NO.	Left Front Door Body Hinge Post	

(1) Total for two-breaker distributor; 26° to 28° for each breaker.
(2) Model E9B1 used on cars equipped with Power Flite.
(3) From top of float chamber to top of float.
(4) Between machined surface of float chamber cover and nearest point on float.
(5) 24 pints refill with Power Flite transmission.
(6) 3.73 with Power Flite transmission.

CAR MODEL	New Yorker De Luxe C-63-2	Custom Imperial C-64	Crown Imperial C-66
ENGINE			
No. Cyl-Head Type	V-8-I	V-8-I	V-8-I
Bore and Stroke (in)	3-13/16x3-5/8	3-13/16x3-5/8	3-13/16x3-5/8
Displacement (cu in)	331.1	331.1	331.1
AMA Horsepower	46.51	46.51	46.51
Max Horsepower @ rpm	235 @ 4400	235 @ 4400	235 @ 4400
Max Torque, lb-ft @ rpm	330 @ 2600	330 @ 2600	330 @ 2600
Max bmep, lb/sq in	150.3	150.3	150.3
Head Material	Cast Iron	Cast Iron	Cast Iron
Compression Ratio	7.5	7.5	7.5
Piston Material	AA	AA	AA
Bearing Material	Steel Backed Babbitt		
IGNITION			
Spark Plug—Factory Eqpt	AL 4GS-150	AL 4GS-150	AL 4GS-150
Alternate	AC 45xL, Champ N-8B		
Spark Plug Gap	.035"	.035"	.035"
Breaker Gap	.017"	.017"	.017"
Cam Angle	32° to 36° (1)	32° to 36° (1)	32° to 36° (1)
Firing Order	1-8-4-3-6-5-7-2		
Timing—Crankshaft Degrees	4° BTC	4° BTC	4° BTC
Adv Deg—Centrif—Vac	24-23	24-23	24-23
Adv Begins—Ends—Eng rpm	775-4200	775-4200	775-4200
Battery—Volts, Terminal Ground	6, Positive	6, Positive	12, Positive
VALVES			
Make and Material Int	Silicon-Chromium Steel		
Exh	Silicon-Chromium Steel		
Tappet Clr—Seat Angle Int	Hydraulic Lifters, 45°		
Exh	Hydraulic Lifters, 45°		
Exhaust Seat Inserts	Yes	Yes	Yes
CARBURETOR			
Make, Model	Car WCFB-2041S		
Type	DD 4 Barrel	DD 4 Barrel	DD 4 Barrel
Float Level	Primary 1/8", Secondary 3/16" (2)		
Choke Control	Automatic	Automatic	Automatic
CAPACITY			
Oil (qt)	5 Refill	5 Refill	5 Refill
Water (qt)	25 (3)	25 (3)	25 (3)
Transmission (pt)	24 Refill	24 Refill	24 Refill
Rear Axle (pt)	3-1/2	3-1/2	5
Gasoline (gal)	20	20	20
GENERAL DATA (Four-Door Sedan)			
Wheelbase (in)	125-1/2	133-1/2 (4)	145-1/2
Over All Lgth Incl Bumpers (in)	215-5/8	223-3/4 (4)	236-3/8
Shipping Weight (lb)	4060	4345	Not Available
Tire Size—Recm Press (lb)	8.00x15-24-24	8.20x15-24-24	8.90x15-24-24
Rear Axle Ratio—Type	3.36 Hyp	3.54 Hyp	3.54 Hyp
LOCATION CHASSIS SERIAL NO.	Left Front Door Body Hinge Post		

(1) Total for two-breaker distributor; 26° to 28° for each breaker.
(2) From machined surface of cover to top of float.
(3) One quart additional with heater.
(4) Custom Imperial Newport, 131-1/2" wheelbase, 221-3/4" overall length.

DE SOTO

CAR MODEL	Powermaster S-20	Fire Dome S-19
ENGINE		
No. Cyl-Head Type	6-L	V-8-I
Bore and Stroke (in)	3-7/16x4-1/2	3-5/8x3-11/32
Displacement (cu in)	250.6	276.1
AMA Horsepower	28.36	42.05
Max Horsepower @ rpm	116 @ 3600	170 @ 4400
Max Torque, lb-ft @ rpm	208 @ 1600	255 @ 2400
Max bmep, lb/sq in	125.1	139.3
Head Material	Cast Iron	Cast Iron
Compression Ratio	7.0	7.5
Piston Material	AA	AA
Bearing Material	Steel Backed Babbitt	
IGNITION		
Spark Plug—Factory Eqpt	AL 4S-140	AL 4S-140
Alternate	AC 45, Champ J-8	AC 45, Champ J-8
Spark Plug Gap	.035"	.035"
Breaker Gap	.020"	.017"
Cam Angle	39° ± 3	32° to 36° (1)
Firing Order	1-5-3-6-2-4	1-8-4-3-6-5-7-2
Timing—Crankshaft Degrees	2° BTC	4° BTC
Adv Deg—Centrif—Vac	20-18	22-23
Adv Begins—Ends—Eng rpm	700-2850	800-3840
Battery—Volts, Terminal Ground	6, Positive	6, Positive
VALVES		
Make and Material Int	Silicon-Chromium Steel	
Exh	Silicon-Chromium Steel	
Tappet Clr—Seat Angle Int	.008" H, 45°	Hyd Lifters, 45°
Exh	.010" H, 45°	Hyd Lifters, 45°
Exhaust Seat Inserts	Yes	Yes
CARBURETOR		
Make, Model	B and B (Car) E9C1	B and B (Car) 2129S (2)
Type	Sgl DD	Dual DD
Float Level	5/64" (3)	9/32" (4)
Choke Control	Automatic	Automatic
CAPACITY		
Oil (qt)	5 Refill	5 Refill
Water (qt)	15 (5)	22 (5)
Transmission (pt)	2-3/4 (6)	2-3/4 (6)
Rear Axle (pt)	3-1/4	3-1/2
Gasoline (gal)	17	17
GENERAL DATA (Four-Door Sedan)		
Wheelbase (in)	125-1/2	125-1/2
Over All Lgth Incl Bumpers (in)	214-1/2	214-1/2
Shipping Weight (lb)	3590	3750
Tire Size—Recm Press (lb)	7.60x15-24-24	7.60x15-24-24
Rear Axle Ratio—Type	3.9 Hyp (7)	3.73 Hyp (8)
LOCATION CHASSIS SERIAL NO. Left Front Door Body Hinge Post		

(1) Total for two-breaker distributor; 26° to 28° for each breaker.
(2) No. 2067S on early production cars.
(3) From top of float chamber without gasket to top center of float.
(4) From top of float chamber without gasket to top of each float.
(5) One quart additional with heater.
(6) 3/4 pint additional with overdrive. 24 pints refill for Power Flite transmission.
(7) 4.3 with overdrive. 3.73 with Power Flite.
(8) 4.1 with overdrive. 3.54 with Power Flite.

CAR MODEL	Meadowbrook Coronet D-51, D-52	Meadowbrook Coronet & Royal D-50, D-53
ENGINE		
No. Cyl-Head Type	6-L	V-8-1
Bore and Stroke (in)	3-1/4x4-5/8	3-7/16x3-1/4
Displacement (cu in)	230.2	241.3
AMA Horsepower	25.35	37.8
Max Horsepower @ rpm	110 @ 3600	150 @ 4400 (1)
Max Torque, lb-ft @ rpm	190 @ 1600	222 @ 2400 (1)
Max bmep, lb/sq in	124.5	138.7 (1)
Head Material	Cast Iron	Cast Iron
Compression Ratio	7.25	7.5 (1)
Piston Material	AA	AA
Bearing Material	Steel Backed Babbitt	
IGNITION		
Spark Plug—Factory Eqpt	AL 4S-140	AL 4S-140
Alternate	AC 45, Champ J-8	AC 45, Champ J-8
Spark Plug Gap	.035"	.035"
Breaker Gap	.020"	.017"
Cam Angle	39° ± 3	32° to 36° (2)
Firing Order	1-5-3-6-2-4	1-8-4-3-6-5-7-2
Timing—Crankshaft Degrees	2° BTC	4° BTC
Adv Deg—Centrif—Vac	16-16	22-23
Adv Begins—Ends—Eng rpm	850-2700	720-3240
Battery—Volts, Terminal Ground	6, Positive	6, Positive
VALVES		
Make and Material Int	Silicon-Chromium Steel	
Exh	Silicon-Chromium Steel	
Tappet Clr—Seat Angle Int	.010" H, 45°	Hyd Lifters, 45°
Exh	.010" H, 45°	Hyd Lifters, 45°
Exhaust Seat Inserts	Yes	Yes
CARBURETOR		
Make, Model	B and B (Car) E9T1	Strom WW-3-108
Type	Sgl DD	Dual DD
Float Level	5/64" (3)	3/16" (4)
Choke Control	Automatic	Automatic
CAPACITY		
Oil (qt)	5 Refill	5 Refill
Water (qt)	14 (5)	19 (5)
Transmission (pt)	2-3/4 (6)	2-3/4 (6)
Rear Axle (pt)	3-1/4	3-1/4
Gasoline (gal)	17	17
GENERAL DATA (Four-Door Sedan)		
Wheelbase (in)	119 (7)	119 (7)
Over All Lgth Incl Bumpers (in)	205-1/2	205-1/2
Shipping Weight (lb)	3235 (Coronet)	3425 (Royal)
Tire Size—Recm Press (lb)	6.70x15-24-24 (8)	7.10x15-24-24
Rear Axle Ratio—Type	3.9 Hyp (9)	3.9 Hyp (10)

LOCATION CHASSIS SERIAL NO. Left Front Door Body Hinge Post

(1) When Meadowbrook Model D-50-1 is equipped with conventional transmission, compression ratio is 7.1, max torque 220 @ 2000, HP 140 @ 4400, max. bmep 137.5.
(2) Total for two-breaker distributor; 26° to 28° dwell for each breaker.
(3) From top of float chamber without gasket to top of float.
(4) From top of float chamber without gasket to top of float at center.
(5) One quart additional with heater.
(6) 3/4 pint additional with overdrive. 3 pints refill for Gyro-Matic transmission. 24 pints refill for Power Flite transmission.
(7) 114" for 2 door Suburban, Sport Coupe, Diplomat, and Convertible—over-all length 190-7/8" to 196" for these models.
(8) 7.10x15 for four-door Suburban.
(9) 4.3 with overdrive. 3.73 with Power Flite.
(10) 4.1 with overdrive. 3.73 wih conventional transmission in Meadowbrook model. 3.54 with Power Flite.

FORD

CAR MODEL	Mainline Customline Crestline Six	Mainline Customline Crestline Eight
ENGINE		
No. Cyl-Head Type	6-I	V-8-I
Bore and Stroke (in)	3.62x3.6	3.5x3.1
Displacement (cu in)	223	239
AMA Horsepower	31.5	39.2
Max Horsepower @ rpm	115 @ 3900	130 @ 4200
Max Torque, lb-ft @ rpm	193 @ 1000-2200	214 @ 1800-2200
Max bmep, lb/sq in	130.5	135.0
Head Material	Cast Iron	Cast Iron
Compression Ratio	7.2	7.2
Piston Material	AA	AA
Bearing Material	Steel Backed Babbitt	Copper-Lead, Steel Backed
IGNITION		
Spark Plug—Factory Eqpt	Champion H-10	Champion H-10
Alternate	AC 45L, AL	AL7 or ARL8
Spark Plug Gap	.035"	.035"
Breaker Gap	.025"	.015"
Cam Angle	35° to 38°	26° to 28.5°
Firing Order	1-5-3-6-2-4	1-5-4-8-6-3-7-2
Timing—Crankshaft Degrees	3°BTC	6°BTC
Adv Deg—Centrif—Vac	(1)	(2)
Adv Begins—Ends—Eng rpm		
Battery—Volts, Terminal Ground	6, Positive	6, Positive
VALVES		
Make and Material Int	Silchrome #1	Silchrome #1
Exh	Nichrome Alloy	Nichrome Alloy
Tappet Clr—Seat Angle Int	.015"H, 45°	.019"H, 45°
Exh	.019"H, 45°	.019"H, 45°
Exhaust Seat Inserts	None	None
CARBURETOR		
Make, Model	Holley 1904-F	Holley-Ford AA-1
Type	Sgl DD	Dual DD
Float Level	11/16"±1/32" (3)	1.275" to 1.305" (4)
Choke Control	Manual	Manual
CAPACITY		
Oil (qt)	4 Refill	5 Refill
Water (qt)	15 (5)	20 (5)
Transmission (pt)	3 (6)	3 (6)
Rear Axle (pt)	3-1/2	3-1/2
Gasoline (gal)	17	17
GENERAL DATA (Four-Door Sedan)		
Wheelbase (in)	115.5	115.5
Over All Lgth Incl Bumpers (in)	198.3	198.3
Shipping Weight (lb)	3154	3251
Tire Size—Recm Press (lb)	6.70x15-26-23	6.70x15-26-23
Rear Axle Ratio—Type	3.9 Hyp (7)	3.9 Hyp (7)
LOCATION CHASSIS SERIAL NO.	Left Front Door Pillar Post	

(1) Full vacuum actuated distributor — maximum advance with wide-open throttle is 26° @ 4000 rpm — at cruising torque maximum advance is 29° @ 2500 rpm.
(2) Full vacuum actuator distributor — maximum advance with wide-open throttle is 30.5° @ 4000 rpm — at cruising torque maximum advance is 34° @ 3000 rpm.
(3) Below bowl at economizer diaphragm cover.
(4) Gauge from air horn to float bottom.
(5) One quart additional with heater.
(6) 4-1/2 pints when equipped with overdrive. Fordomatic requires 9-1/2 quarts.
(7) 4.1 optional. 4.1 standard, 3.9 and 3.31 optional with overdrive. With Fordomatic on "Six" 3.31 standard, 3.54 optional — on "Eight" 3.54 standard, 3.31 optional.

CAR MODEL	Corsair 543	Corsair Deluxe 544
ENGINE		
No. Cyl-Head Type	4-L	6-L
Bore and Stroke (in)	3.125x4.375	3.125x3.5
Displacement (cu in)	134.2	161.0
AMA Horsepower	15.63	23.4
Max Horsepower @ rpm	63 @ 4000	80 @ 3800
Max Torque, lb-ft @ rpm	109 @ 1800	133 @ 1600
Max bmep, lb/sq in	122.4	124.5
Head Material	Cast Iron	Cast Iron
Compression Ratio	7.0	7.0
Piston Material	AA	AA
Bearing Material	Steel Backed Babbitt	
IGNITION		
Spark Plug—Factory Eqpt	AL A7	AL A7
Alternate	AC-45, Champ J-8	AC-45, Champ J-8
Spark Plug Gap	.028" to .032"	.028" to .032"
Breaker Gap	.022"	.022"
Cam Angle	25° to 34°	31° to 37°
Firing Order	1-3-4-2	1-5-3-6-2-4
Timing—Crankshaft Degrees	5° BTDC	5° BTDC
Adv Deg—Centrif—Vac	24-22	26-12
Adv Begins—Ends—Eng rpm	600-3000	700-3000
Battery—Volts, Terminal Ground	6, Positive	6, Positive
VALVES		
Make and Material Int	AISI C-3140	AISI C-3140
Exh	Uniloy 21-12 Steel	
Tappet Clr—Seat Angle Int	.016" C, 45°	.016" C, 45°
Exh	.016" C, 45°	.016" C, 45°
Exhaust Seat Inserts	None	None
CARBURETOR		
Make, Model	Carter YF	Carter YF
Type	Single DD	Single DD
Float Level	(1)	(1)
Choke Control	Automatic	Automatic
CAPACITY		
Oil (qt)	4	5
Water (qt)	10.8 (2)	9.5 (2)
Transmission (pt)	1-1/2 (3)	1-1/2 (3)
Rear Axle (pt)	2-1/2	2-1/2
Gasoline (gal)	13	13
GENERAL DATA (5 Passenger Sedan)		
Wheelbase (in)	100	100
Over All Lgth Incl Bumpers (in)	181.75	182.125
Shipping Weight (lb)	2405 (4)	2455 (4)
Tire Size—Recm Press (lb)	15x5.90	15x5.90
Rear Axle Ratio—Type	4.27 Hyp (5)	4.10 Hyp (5)
LOCATION CHASSIS SERIAL NO.	Left Front Pillar Post	

(1) From top of float to bottom surface of float bowl cover without gasket.
(2) One quart additional when equipped with a heater.
(3) 3/4 pint additional when equipped with an overdrive.
(4) Add 40 pounds with overdrive, deck lid 15 pounds.
(5) 4.55 when equipped with heater.

HUDSON

CAR MODEL	Jet 1D Super Jet 2D Jet Liner 3D	Wasp 4D
ENGINE		
No. Cyl-Head Type	6-L	6-L
Bore and Stroke (in)	3x4-3/4	3-9/16x3-7/8
Displacement (cu in)	202	232
AMA Horsepower	21.6	30.45
Max Horsepower @ rpm	104 @ 4000	126 @ 4400
Max Torque, lb-ft @ rpm	158 @ 1400	178 @ 2400
Max bmep, lb/sq in	117.9	115.5
Head Material	Cast Iron (1)	Cast Iron (1)
Compression Ratio	7.5 (1)	7.0 (1)
Piston Material	AA	AA
Bearing Material	Steel Backed Babbitt	
IGNITION		
Spark Plug—Factory Eqpt	Champion H-10	Champion H-10
Alternate	AC 45L, AL AL7 or ARL 8	
Spark Plug Gap	.032"	.032"
Breaker Gap	.020"	.020"
Cam Angle	39°	39°
Firing Order	1-5-3-6-2-4	1-5-3-6-2-4
Timing—Crankshaft Degrees	TDC	TDC
Adv Deg—Centrif—Vac	29-15	20-10
Adv Begins—Ends—Eng rpm	600-3000	600-2400
Battery—Volts, Terminal Ground	6, Positive	6, Positive
VALVES		
Make and Material Int	Eaton 8645	Eaton 8645
Exh	Eaton 2112	Eaton 2112
Tappet Clr—Seat Angle Int	.010"H, 45°	.008"H, 45°
Exh	.012"H, 45°	.010"H, 45°
Exhaust Seat Inserts	None	None
CARBURETOR		
Make, Model	Car WAI 2009SA	Car WAI 749S (2)
Type	Sgl DD	Sgl DD
Float Level	7/16" (3)	1/2" (3)
Choke Control	Automatic	Automatic
CAPACITY		
Oil (qt)	5 Refill	7 Refill
Water (qt)	15 (4)	18-1/2 (4)
Transmission (pt)	1-1/2 (5)	2-1/4 (5)
Rear Axle (pt)	2-1/2	3-1/2
Gasoline (gal)	15	20
GENERAL DATA (Four-Door Sedan)		
Wheelbase (in)	105	119-7/8
Over All Lgth Incl Bumpers (in)	180-11/16	201-1/2
Shipping Weight (lb)	2675	3440
Tire Size—Recm Press (lb)	5.90x15-26-24 (6)	7.10x15-26-24 (7)
Rear Axle Ratio—Type	4.1 Hyp (8)	4.09 Hyp (9)
LOCATION CHASSIS SERIAL NO.	Right Front Pillar Post	

(1) Aluminum head optional: 8.0 compression ratio for Jets and 7.5 for Wasp.
(2) Optional: Two carburetor system available with optional 262" Super Wasp engine—Carter WAI 2114S.
(3) From projection on bowl cover to soldered seam of float—with cover inverted and needle seated.
(4) Add 1 quart when equipped with heater.
(5) With overdrive: Jets 2-1/2 pints, Wasp 3-1/2 pints. With automatic transmission: Jets 8-1/2 quarts refill, Wasp 11 quarts refill.
(6) 6.40x15 standard on Super Jet and Jet Liner, optional on Jet.
(7) 7.60x15 optional. 7.60x15 standard on convertible brougham.
(8) 4.27 with overdrive, 3.54 with Hydra-Matic. Optional: Conventional 4.27 or 3.31, overdrive 4.1—3.54—3.31, Hydra-Matic 3.31.
(9) 4.55 with overdrive, 3.07 with automatic transmission.

CAR MODEL	Super Wasp 5D	Hornet 7D
ENGINE		
No. Cyl-Head Type	6-L	6-L
Bore and Stroke (in)	3-9/16x4-3/8	3-13/16x4-1/2
Displacement (cu in)	262	308
AMA Horsepower	30.45	34.88
Max Horsepower @ rpm	140 @ 4000	160 @ 3800
Max Torque, lb-ft @ rpm	214 @ 1600	264 @ 1800
Max bmep, lb/sq in	122.8	129.3
Head Material	Cast Iron (1)	Aluminum
Compression Ratio	7.0 (1)	7.5
Piston Material	AA	AA
Bearing Material	Steel Backed Babbitt	
IGNITION		
Spark Plug—Factory Eqpt	Champion H-10	Champion H-11
Alternate	AC 45L, AL AL7 or ARL 8	
Spark Plug Gap	.032"	.032"
Breaker Gap	.020"	.020"
Cam Angle	39°	39°
Firing Order	1-5-3-6-2-4	1-5-3-6-2-4
Timing—Crankshaft Degrees	TDC	TDC
Adv Deg—Centrif—Vac	18-8	18-8
Adv Begins—Ends—Eng rpm	1000-4000	1000-4000
Battery—Volts, Terminal Ground	6, Positive	6, Positive
VALVES		
Make and Material Int	Eaton 8645	Eaton 8645
Exh	Eaton 2112	Eaton 2112
Tappet Clr—Seat Angle Int	.008"H, 45°	.008"H, 45°
Exh	.010"H, 45°	.010"H, 45°
Exhaust Seat Inserts	None	None
CARBURETOR		
Make, Model	Car WGD 2115S (2)	Car WGD 2115S (2)
Type	Dual DD	Dual DD
Float Level	3/16" (3)	3/16" (3)
Choke Control	Automatic	Automatic
CAPACITY		
Oil (qt)	7 Refill	7 Refill
Water (qt)	18-1/2 (4)	18-1/2 (4)
Transmission (pt)	2-1/4 (5)	2-1/4 (5)
Rear Axle (pt)	3-1/2	3-1/2
Gasoline (gal)	20	20
GENERAL DATA (Four-Door Sedan)		
Wheelbase (in)	119-7/8	123-7/8
Over All Lgth Incl Bumpers (in)	202-15/16	208-7/8
Shipping Weight (lb)	3525	3620
Tire Size—Recm Press (lb)	7.10x15 (6)	7.10x15 (6)
Rear Axle Ratio—Type	4.09 Hyp (7)	4.09 Hyp (7)
LOCATION CHASSIS SERIAL NO.	Right Front Pillar Post	

(1) 7.5 aluminum head optional.
(2) Optional: two-carburetor system; Super Wasp-Carter WAI 2114S, Hornet-Carter WAI 2113S.
(3) From bowl cover to top of float—with cover inverted and needle seated.
(4) Add one quart when equipped with heater.
(5) 3-1/2 pints with overdrive. Automatic transmission requires 11 quarts.
(6) 8.00x15 optional. 7.60x15 standard on convertible brougham.
(7) Overdrive 4.55. Automatic transmission 3.07.

KAISER

CAR MODEL	Special K-541	Manhattan K-542
ENGINE		
No. Cyl-Head Type	6-L	6-L
Bore and Stroke (in)	3.3125x4.375	3.3125x4.375
Displacement (cu in)	226.2	226.2
AMA Horsepower	26.3	26.3
Max Horsepower @ rpm	118 @ 3650	140 @ 3800
Max Torque, lb-ft @ rpm	200 @ 1800	215 @ 2600
Max bmep, lb/sq in	133.3	143.3
Head Material	Cast Iron	Cast Iron
Compression Ratio	7.3	7.3
Piston Material	AA	AA
Bearing Material	Steel Backed Babbitt	
IGNITION		
Spark Plug—Factory Eqpt	AL A7	AL A7
Alternate	AC 45, Champion J-8	
Spark Plug Gap	.028" to .032"	.028" to .032"
Breaker Gap	.016"	.016"
Cam Angle	38°-45°	38°-45°
Firing Order	1-5-3-6-2-4	1-5-3-6-2-4
Timing—Crankshaft Degrees	4° BTDC	4° BTDC
Adv Deg—Centrif—Vac	18-10	20-10
Adv Begins—Ends—Eng rpm	640-3200	650-2000
Battery—Volts, Terminal Ground	6, Positive	6, Positive
VALVES		
Make and Material Int	Silichrome #1	Silichrome #1
Exh	Sil XCR	Sil XCR
Tappet Clr—Seat Angle Int	.014" C, 30°	.014" C, 30°
Exh	.014" C, 45°	.014" C, 45°
Exhaust Seat Inserts	None	None
CARBURETOR		
Make, Model	Carter WGD	Carter WGD
Type	Dual DD	Dual DD
Float Level	1/4" (1)	11/32" (1)
Choke Control	Automatic	Automatic
CAPACITY		
Oil (qt)	5 (2)	5 (2)
Water (qt)	12.5 (3)	12.5 (3)
Transmission (pt)	2-1/2 (4)	2-1/2 (4)
Rear Axle (pt)	2-1/2	2-1/2
Gasoline (gal)	17	17
GENERAL DATA (Four-Door Sedan)		
Wheelbase (in)	118.5	118.5
Over All Lgth Incl Bumpers (in)	213.78	215.62
Shipping Weight (lb)	3210 (5)	3375 (5)
Tire Size—Recm Press (lb)	15x6.70	15x6.70
Rear Axle Ratio—Type	3.91 Hyp (6)	3.91 Hyp (6)
LOCATION CHASSIS SERIAL NO.	Left Front Pillar Post	

(1) From top of float to bottom of float bowl cover.
(2) 5 quarts refill—6 quarts with new filter.
(3) One quart additional with heater.
(4) 3-1/2 with overdrive.
(5) Add 115 pounds with Hydra-Matic; 40 pounds with overdrive.
(6) 4.55 with overdrive; 3.31 with automatic.

CAR MODEL	Lincoln Cosmopolitan and Capri	Mercury Custom and Special Custom
ENGINE		
No. Cyl-Head Type	V-8-I	V-8-I
Bore and Stroke (in)	3.8x3.5	3.62x3.1
Displacement (cu in)	317	256
AMA Horsepower	46.2	42.05
Max Horsepower @ rpm	205 @ 4200	161 @ 4400
Max Torque, lb-ft @ rpm	305 @ 2300-3000	238 @ 2200-2800
Max bmep, lb/sq in	144.8	140.2
Head Material	Cast Iron	Cast Iron
Compression Ratio	8.0	7.5
Piston Material	AA	AA
Bearing Material	Steel Backed Babbitt	Copper-Lead, Steel Backed
IGNITION		
Spark Plug—Factory Eqpt	Champion H-10	Champion H-10
Alternate	AC 45L, AL	AL7 or ARL8
Spark Plug Gap	.033" to .037"	.029" to .033"
Breaker Gap	.014" to .016"	.014" to .016"
Cam Angle	26° to 28.5°	26° to 28.5°
Firing Order	1-5-4-8-6-3-7-2	1-5-4-8-6-3-7-2
Timing—Crankshaft Degrees	3°BTC	3°BTC
Adv Deg—Centrif—Vac	(1)	(2)
Adv Begins—Ends—Eng rpm		
Battery—Volts, Terminal Ground	6, Positive	6, Positive
VALVES		
Make and Material Int	Silchrome #1	Silchrome #1
Exh	Nichrome Alloy	Nichrome Alloy
Tappet Clr—Seat Angle Int	Hyd Lifters, 45°	.019"H, 45°
Exh	Hyd Lifters, 45°	.019"H, 45°
Exhaust Seat Inserts	None	None
CARBURETOR		
Make, Model	Holley 2140	Holley 2140
Type	DD 4 Barrel	DD 4 Barrel
Float Level	1/2" ± 1/32" (3)	1/2" ± 1/32" (3)
Choke Control	Automatic	Automatic
CAPACITY		
Oil (qt)	5 Refill	5 Refill
Water (qt)	22.5 (4)	19 (5)
Transmission (pt)	22	3 (6)
Rear Axle (pt)	4	3.5
Gasoline (gal)	20	19
GENERAL DATA (Four-Door Sedan)		
Wheelbase (in)	123	118
Over All Lgth Incl Bumpers (in)	214.8	203.7
Shipping Weight (lb)	4048	3439
Tire Size—Recm Press (lb)	8.00x15-26-22	7.10x15-26-22
Rear Axle Ratio—Type	3.31 Hyp	3.91 Hyp (7)
LOCATION CHASSIS SERIAL NO.	Right Front Door Pillar Post	

(1) Full vacuum actuated distributor — maximum advance with wide-open throttle is 33° @ 4000 rpm — at cruising torque maximum advance is 34° @ 4000 rpm.
(2) Full vacuum actuated distributor — maximum advance with wide-open throttle is 33° @ 4000 rpm — at cruising torque maximum advance is 33.5° @ 4000 rpm.
(3) From top of bowl without gasket to fuel level.
(4) Two quarts additional with heater.
(5) One quart additional with heater.
(6) 4-1/2 pints with overdrive. Merc-O-Matic requires 9-5/8 quarts.
(7) 4.09 optional. 4.09 standard with overdrive, 3.91 optional. 3.54 standard with Merc-O-Matic, 3.31 optional.

		← HOTTER →
AC	14 mm	48 48X 46-5 46X 46 45XL** 45 44-5 45L*
	10 mm	M-8 106
	18 mm	88* 86
	⅞"	78 78S* 76 76S
CHAMPION	14 mm	J-14 J-12 H-12* J-11 H-11* J-8 H-10*
	10 mm	Y-8 Y-6
	18 mm	10 Com-64* 9 15-A 8 Com C-7
	⅞"	
AUTOLITE	14 mm	A 11 AR10 AT10 A9 4GS125** AR8 ARL8* AT8 4S140 A7 AL7* 4GS150**
	10 mm	P6 PR6
	18 mm	BT10 BR10 BT8 BR8
	⅞"	TT10 TT8
TORQUE WRENCH CHART		Always use a spark plug socket wrench or a torque wrench. These wrenches are readily obtainable and are the only kind which will avoid distortion of the plug and insure the insulator against damage or breakage.

* Long Reach (7/16")
** Extra Long Reach (¾")

RANGE COMPARISONS

COLDER →		
44 43L* 43-5	14 mm	AC
104	10 mm	
	18 mm	
74	7/8"	
J-7 H-9* J-6 H-8* J-5 J-2	14 mm	CHAMPION
Y-4-A	10 mm	
6 Com 7 5 Com 4 Com	18 mm	
	7/8"	
AT6 AR5 ARL5* 4S165 A5 AL5* 4GS175** AR4 AT4 4GS200** A3	14 mm	AUTOLITE
P4 PR4	10 mm	
BT6 BT4 BR4 BT3	18 mm	
TT4	7/8"	

TORQUE WRENCH CHART

Average torque wrench pressures recommended for standard plugs in vehicles. All pressures listed are based on spark plug and engine threads being clean.

Plug Thread	Cast Iron Heads	Aluminum Heads
10 mm	14 lb-ft	11 lb-ft
14 mm	30 lb-ft	27 lb-ft
18 mm	34 lb-ft	32 lb-ft
7/8"	37 lb-ft	35 lb-ft

NASH

CAR MODEL	Rambler 100" Wheelbase with conventional Transmission	Rambler 108" Wheelbase (also 100" Wheelbase with Hydra-Matic)
ENGINE		
No. Cyl-Head Type	6-L	6-L
Bore and Stroke (in)	3-1/8x4	3-1/8x4-1/4
Displacement (cu in)	184	195.6
AMA Horsepower	23.44	23.44
Max Horsepower @ rpm	85 @ 3800	90 @ 3800
Max Torque, lb-ft @ rpm	150 @ 1600	150 @ 1600
Max bmep, lb/sq in	122.9	115.7
Head Material	Cast Iron	Cast Iron
Compression Ratio	7.25 (1)	7.3 (1)
Piston Material	AA	AA
Bearing Material	Steel Backed Babbitt	
IGNITION		
Spark Plug—Factory Eqpt	AL-A7	AL-A7
Alternate	AC 44-5, Champion J-7	
Spark Plug Gap	.030"	.030"
Breaker Gap	.022"	.022"
Cam Angle	31° to 37°	31° to 37°
Firing Order	1-5-3-6-2-4	1-5-3-6-2-4
Timing—Crankshaft Degrees	TDC	4° ATC
Adv Deg—Centrif—Vac	22-11	22-11
Adv Begins—Ends—Eng rpm	600-2800	600-2800
Battery—Volts, Terminal Ground	6, Positive	6, Positive
VALVES		
Make and Material Int	Various 3140	Various 3140
Exh	AI, Eaton or Rich 2112	
Tappet Clr—Seat Angle Int	.015"H, 45°	.015"H, 45°
Exh	.015"H, 45°	.015"H, 45°
Exhaust Seat Inserts	None	None
CARBURETOR		
Make, Model	Car YF-2014S	Car YF-2014S
Type	Sgl DD	Sgl DD
Float Level	1/2" (2)	1/2" (2)
Choke Control	Automatic	Automatic
CAPACITY		
Oil (qt)	4 Refill	4 Refill
Water (qt)	11 (3)	11 (3)
Transmission (pt)	1-1/2 (4)	1-1/2 (4)
Rear Axle (pt)	3	3
Gasoline (gal)	20	20
GENERAL DATA		
Wheelbase (in)	100	108
Over All Lgth Incl Bumpers (in)	185-3/8	193-3/8
Shipping Weight (lb)	2550	2650
Tire Size—Recm Press (lb)	6.40x15-24-24 (5)	6.40x15-24-24
Rear Axle Ratio—Type	3.77 Hyp (6)	3.77 Hyp (6)
LOCATION CHASSIS SERIAL NO.	Under Hood on Dash Panel	

(1) 7.5 optional.
(2) From top of float at free end to float chamber cover flange.
(3) One quart additional with heater.
(4) 2-3/4 pints with overdrive. 17 pints refill with Hydra-Matic.
(5) 6.40x15 custom. 5.90x15 for super.
(6) 4.4 optional. With overdrive 4.4 standard, 4.1 optional. With Hydra-Matic 3.3 standard.

CAR MODEL	Statesman 5440	Ambassador 5460
ENGINE		
No. Cyl-Head Type	6-L	6-I
Bore and Stroke (in)	3-1/8x4-1/4	3-1/2x4-3/8
Displacement (cu in)	195.6	252.6
AMA Horsepower	23.44	29.4
Max Horsepower @ rpm	110 @ 4000	130 @ 3700 (1)
Max Torque, lb-ft @ rpm	155 @ 2000	220 @ 1600 (1)
Max bmep, lb/sq in	119.4	131.3
Head Material	Aluminum	Cast Iron
Compression Ratio	8.5	7.6 (1)
Piston Material	AA	AA
Bearing Material	Steel Backed Babbitt	
IGNITION		
Spark Plug—Factory Eqpt	AL-AL5	AL-A7
Alternate	AC 43L, Champ H-8	AC 44-5, Champ J-7
Spark Plug Gap	.030"	.030"
Breaker Gap	.022"	.022"
Cam Angle	31° to 37°	31° to 37°
Firing Order	1-5-3-6-2-4	1-5-3-6-2-4
Timing—Crankshaft Degrees	4°ATC	TDC
Adv Deg—Centrif—Vac	22-11	28-12
Adv Begins—Ends—Eng rpm	675-3600	600-2700
Battery—Volts, Terminal Ground	6, Positive	6, Positive
VALVES		
Make and Material Int	Various 3140	Various 3140
Exh	AI, Eaton or Rich 2112	
Tappet Clr—Seat Angle Int	.015"H, 45°	.012"H, 30°
Exh	.015"H, 45°	.016"H, 45°
Exhaust Seat Inserts	Yes	None
CARBURETOR		
Make, Model	Car YF-2098S	Car YH-895S (2)
Type	Sgl DD (3)	Sgl SD
Float Level	3/8" (4)	3/8" (4)
Choke Control	Automatic	Automatic
CAPACITY		
Oil (qt)	4 Refill	6 Refill
Water (qt)	14 (5)	17 (5)
Transmission (pt)	2-1/4 (6)	2-1/4 (7)
Rear Axle (pt)	3	4
Gasoline (gal)	20	20
GENERAL DATA (Four-Door Sedan)		
Wheelbase (in)	114-1/4	121-1/4
Over All Lgth Incl Bumpers (in)	202-1/4	209-1/4
Shipping Weight (lb)	3045	3430
Tire Size—Recm Press (lb)	6.70x15-24-24	7.10x15-24-24
Rear Axle Ratio—Type	4.4 Hyp (8)	4.1 Hyp (9)
LOCATION CHASSIS SERIAL NO.	Under Hood on Dash Panel	

(1) Optional is LeMans Dual Jetfire engine with 8.0:1 aluminum head. HP 140 @ 4000, max torque 230 @ 2000.
(2) LeMans Dual Jetfire engine uses two Carter carburetors—YH-973S front, YH-974S rear.
(3) Uses two carburetors.
(4) From bowl cover to top of float—with bowl cover assembly inverted and needle seated.
(5) One quart additional with heater.
(6) 3-1/2 pints with overdrive. 17 pints refill with Hydra-Matic.
(7) 3-1/2 pints with overdrive. 22 pints refill with Hydra-Matic.
(8) 4.1 optional. 4.9 standard with overdrive, 4.4 optional. 3.6 standard with Hydra-Matic.
(9) 4.4 standard with overdrive, 4.1 optional. 3.15 standard with Hydra-Matic.

OLDSMOBILE

CAR MODEL	"88"	Super "88"	Ninety-Eight
ENGINE			
No. Cyl-Head Type	V-8-I	V-8-I	V-8-I
Bore and Stroke (in)	3-7/8x3-7/16	3-7/8x3-7/16	3-7/8x3-7/16
Displacement (cu in)	324.31	324.31	324.31
AMA Horsepower	48	48	48
Max Horsepower @ rpm	170 @ 4000	185 @ 4000	185 @ 4000
Max Torque, lb-ft @ rpm	300 @ 2000	300 @ 2000	300 @ 2000
Max bmep, lb/sq in	139.5	139.5	139.5
Head Material	Cast Iron	Cast Iron	Cast Iron
Compression Ratio	8.25	8.25	8.25
Piston Material	AA	AA	AA
Bearing Material		Steel Backed Durex	
IGNITION			
Spark Plug—Factory Eqpt	AC 46-5	AC 46-5	AC 46-5
Alternate		AL A9 or AR8, Champ J-11	
Spark Plug Gap	.030"	.030"	.030"
Breaker Gap	.016"	.016"	.016"
Cam Angle	26° to 33°	26° to 33°	26° to 33°
Firing Order		1-8-7-3-6-5-4-2	
Timing—Crankshaft Degrees	5° BTC	5° BTC	5° BTC
Adv Deg—Centrif—Vac	29-20	29-20	29-20
Adv Begins—Ends—Eng rpm	650-3600	650-3600	650-3600
Battery—Volts, Terminal Ground	12, Negative	12, Negative	12, Negative
VALVES			
Make and Material Int		Various 3140 or 8645	
Exh		TP or Eaton Sil XCR	
Tappet Clr—Seat Angle Int		Hydraulic Lifters, 45°	
Exh		Hydraulic Lifters, 45°	
Exhaust Seat Inserts	None	None	None
CARBURETOR			
Make, Model	Car WGD	RP 4GC or Car WCFB	
Type	Dual DD	DD 4 Barrel	
Float Level	1/4"±1/64"(1)	(2)	(2)
Choke Control	Automatic	Automatic	Automatic
CAPACITY			
Oil (qt)	5 Refill	5 Refill	5 Refill
Water (qt)	20.5 (3)	20.5 (3)	20.5 (3)
Transmission (pt)	2-1/2 (4)	2-1/2 (4)	2-1/2 (4)
Rear Axle (pt)	5	5	5
Gasoline (gal)	20	20	20
GENERAL DATA (Four-Door Sedan)			
Wheelbase (in)	122	122	126
Over All Lgth Incl Bumpers (in)	205-1/4	205-1/4	214-1/4
Shipping Weight (lb)	3692	3734	3846
Tire Size—Recm Press (lb)	7.60x15-24-22	7.60x15-24-22	7.60x15-24-22
Rear Axle Ratio—Type	3.42 Hyp(5)	3.42 Hyp(6)	3.42 Hyp(6)
LOCATION CHASSIS SERIAL NO.		Left Front Door Pillar Post	

(1) From flange of cover to top of float.
(2) Rochester: 1-5/8" from cover gasket to bottom of float with bowl cover inverted and needle seated. Carter: 1/4" from machined face of cover to top of float with bowl cover inverted and needle seated.
(3) One quart additional with heater.
(4) Hydra-Matic requires 10-1/2 quarts for refill.
(5) 3.64 optional. 3.07 standard with Hydra-Matic.
(6) 3.64 optional. 3.23 standard with Hydra-Matic.

CAR MODEL	Plaza P-25-1 Savoy P-25-2 Belvedere P-25-3
ENGINE	
No. Cyl-Head Type	6-L
Bore and Stroke (in)	3-1/4x4-3/8
Displacement (cu in)	217.8
AMA Horsepower	25.35
Max Horsepower @ rpm	100 @ 3600
Max Torque, lb-ft @ rpm	177 @ 1600
Max bmep, lb/sq in	122.5
Head Material	Cast Iron
Compression Ratio	7.1
Piston Material	AA
Bearing Material	Steel Backed Babbitt
IGNITION	
Spark Plug—Factory Eqpt	AL 4S-140
Alternate	AC 45, Champ J-8
Spark Plug Gap	.035"
Breaker Gap	.020"
Cam Angle	39° ± 3
Firing Order	1-5-3-6-2-4
Timing—Crankshaft Degrees	2° BTC
Adv Deg—Centrif—Vac	18-16
Adv Begins—Ends—Eng rpm	700-2600
Battery—Volts, Terminal Ground	6, Positive
VALVES	
Make and Material Int	Silicon-Chromium Steel
Exh	Silicon-Chromium Steel
Tappet Clr—Seat Angle Int	.010" H, 45°
Exh	.010" H, 45°
Exhaust Seat Inserts	Yes
CARBURETOR	
Make, Model	Ball and Ball (Carter) 920S (1)
Type	Sgl DD
Float Level	7/32" (2)
Choke Control	Automatic
CAPACITY	
Oil (qt)	5 Refill (3)
Water (qt)	13 (4)
Transmission (pt)	2-3/4 (5)
Rear Axle (pt)	3-1/4
Gasoline (gal)	17
GENERAL DATA (Four-Door Sedan)	
Wheelbase (in)	114
Over All Lgth Incl Bumpers (in)	193-1/2
Shipping Weight (lb)	(6)
Tire Size—Recm Press (lb)	6.70x15-24-24
Rear Axle Ratio—Type	3.73 Hyp (7)

LOCATION CHASSIS SERIAL NO. Left Front Door Body Hinge Post

(1) Model D6H2 on early production cars.
(2) From top of float chamber without gasket to top of float.
(3) With Hy-Drive transmission, engine and torque converter have a combined oil system and require 10 quarts of oil.
(4) Without heater. One additional quart with heater.
(5) 3/4 pint additional with overdrive; with Hy-Drive, engine and torque converter have a combined oil system and require 10 quarts of oil.
(6) 3004 for Plaza, 3036 for Savoy, 3050 for Belvedere.
(7) 4.1 with overdrive; 3.73 with torque converter.

PACKARD

CAR MODEL	Clipper Special 5400	Clipper Deluxe and Super 5401 and 5411
ENGINE		
No. Cyl-Head Type	8-L	8-L
Bore and Stroke (in)	3-1/2x3-3/4	3-1/2x4-1/4
Displacement (cu in)	288	327
AMA Horsepower	39.2	39.2
Max Horsepower @ rpm	150 @ 4000	165 @ 3600
Max Torque, lb-ft @ rpm	260 @ 2200	295 @ 2200
Max bmep, lb/sq in	136	138
Head Material	Cast Iron	Cast Iron
Compression Ratio	7.7	8.0
Piston Material	AA	AA
Bearing Material	Special Composite Construction	
IGNITION		
Spark Plug—Factory Eqpt	Champion J-8	Champion J-8
Alternate	AC 44-5, AL-A7 or AR8	
Spark Plug Gap	.025"	.025"
Breaker Gap	.015"	.015"
Cam Angle	27°	31° (1)
Firing Order	1-6-2-5-8-3-7-4	1-6-2-5-8-3-7-4
Timing—Crankshaft Degrees	6°BTC	6°BTC
Adv Deg—Centrif—Vac	16-10	16-12 (1)
Adv Begins—Ends—Eng rpm	600-3200	600-3200
Battery—Volts, Terminal Ground	6, Positive	6, Positive
VALVES		
Make and Material Int	Eaton 8645 or equivalent	
Exh	Eaton 2112 or Rich 2155 N	
Tappet Clr—Seat Angle Int	.007"H, 30°	.007"H, 30°
Exh	.010"H, 45°	.010"H, 45°
Exhaust Seat Inserts	None	None
CARBURETOR		
Make, Model	Car WGD-986S	Car WGD-2102S
Type	Dual DD	Dual DD
Float Level	13/64 (2)	13/64 (2)
Choke Control	Automatic	Automatic
CAPACITY		
Oil (qt)	7 Refill	7 Refill
Water (qt)	19.9 (3)	19.9 (3)
Transmission (pt)	2 (4)	2 (4)
Rear Axle (pt)	4-1/4	4-1/4
Gasoline (gal)	20	20
GENERAL DATA (Four-Door Sedan)		
Wheelbase (in)	122"	122"
Over All Lgth Incl Bumpers (in)	215-1/2	215-1/2
Shipping Weight (lb)	(5)	(5)
Tire Size—Recm Press (lb)	7.60x15-24-24	7.60x15-24-24
Rear Axle Ratio—Type	3.9 Hyp (6)	3.9 Hyp (7)
LOCATION CHASSIS SERIAL NO.	Left Front Door Hinge Pillar	

(1) Ignition data shown for Clipper Super. Ignition data for Clipper Deluxe same as for Clipper Special.
(2) Measured from float to cover.
(3) 2/3 quart additional with heater.
(4) 3-1/4 pints with overdrive. Ultramatic requires 12 quarts.
(5) With Ultramatic—Special 3790, Deluxe 3795, Super 3830.
(6) 4.1 standard with overdrive. 3.54 standard with Ultramatic transmission.
(7) 4.1 standard with overdrive. 3.23 standard with Ultramatic transmission.

CAR MODEL	Cavalier	Patrician Pacific Caribbean and Convertible	Custom
ENGINE			
No. Cyl-Head Type	8L	8L	8L
Bore and Stroke (in)	3-1/2x4-1/4	3-9/16x4-1/2	3-9/16x4-1/2
Displacement (cu in)	327	359	359
AMA Horsepower	39.2	40.6	40.6
Max Horsepower @ rpm	185 @ 4000	212 @ 4000	212 @ 4000
Max Torque, lb-ft @ rpm	310 @ 2200	330 @ 2200	330 @ 2200
Max bmep, lb/sq in	142.9	139	139
Head Material	Cast Iron	Aluminum	Aluminum
Compression Ratio	8.0	8.7	8.7
Piston Material	AA	AA	AA
Bearing Material	Special Composite Construction		
IGNITION			
Spark Plug—Factory Eqpt	Champ J-8	Champ J-8	Champ J-8
Alternate	AC 44-5, AL-A7 or AR8		
Spark Plug Gap	.025"	.025"	.025"
Breaker Gap	.015"	.015"	.015"
Cam Angle	31°	31°	31°
Firing Order	1-6-2-5-8-3-7-4		
Timing—Crankshaft Degrees	6° BTC	TDC	TDC
Adv Deg—Centrif—Vac	16-12	20-18	20-18
Adv Begins—Ends—Eng rpm	600-3200	600-1925	600-1925
Battery—Volts, Terminal Ground	6, Positive	6, Positive	6, Positive
VALVES			
Make and Material Int	3140 or 8645	Sil #1	Sil #1
Exh	Eaton 2112 or Rich 2155N		
Tappet Clr—Seat Angle Int	Hydraulic Lifters, 30°		
Exh	Hydraulic Lifters, 45°		
Exhaust Seat Inserts	None	None	None
CARBURETOR			
Make, Model	Car WCFB 2103S		Car WCFB 2112S
Type	Four Barrel Down Draft		
Float Level	(1)	(2)	(2)
Choke Control	Automatic	Automatic	Automatic
CAPACITY			
Oil (qt)	7 Refill	7 Refill	7 Refill
Water (qt)	19.9 (3)	19.9 (3)	19.9 (3)
Transmission (pt)	2 (4)	2 (4)	2 (4)
Rear Axle (pt)	4-1/4	4-1/4	4-1/4
Gasoline (gal)	20	20	20
GENERAL DATA (Four-Door Sedan)			
Wheelbase (in)	127	127 (5)	149
Over All Lgth Incl Bumpers (in)	216-1/2	216-1/2	238-1/2
Shipping Weight (lb)	4090 (6)	4190 (6)	4785 (6)
Tire Size—Recm Press (lb)	8.00x15-24-24	8.00x15-24-24	8.20x15-24-24
Rear Axle Ratio—Type	3.9 Hyp (7)	3.9 Hyp (7)	4.1 (8)
LOCATION CHASSIS SERIAL NO.	Left Front Door Hinge Pillar		

(1) Float to cover, primary 5/32", secondary 5/32".
(2) Float to cover, primary 1/8", secondary 5/32".
(3) 21.05 quarts required with heater.
(4) 3-1/4 pints with overdrive. Ultramatic requires 12 quarts.
(5) 122" wheelbase for Hardtop and Convertibles.
(6) With Ultramatic transmission.
(7) 4.1 standard with overdrive. 3.54 standard with Ultramatic transmission.
(8) 4.55 standard with overdrive. 3.9 standard with Ultramatic transmission.

PONTIAC

CAR MODEL	25 Chieftain 6	27 Chieftain 8	28 Star Chief 8
ENGINE			
No. Cyl-Head Type	6-L	8-L	8-L
Bore and Stroke (in)	3-9/16x4	3-3/8x3-3/4	3-3/8x3-3/4
Displacement (cu in)	239.2	268.4	268.4
AMA Horsepower	30.46	36.45	36.45
Max Horsepower @ rpm	118 @ 3800(1)	127 @ 3800(1)	127 @ 3800(1)
Max Torque, lb-ft @ rpm	197 @ 2000(1)	234 @ 2200(1)	234 @ 2200(1)
Max bmep, lb/sq in	124.0 (1)	131.5 (1)	131.5 (1)
Head Material	Cast Iron	Cast Iron	Cast Iron
Compression Ratio	7.7 (2)	7.7 (3)	7.7 (3)
Piston Material	AA	Cast Iron	Cast Iron
Bearing Material	Thin Babbitt On Steel		
IGNITION			
Spark Plug—Factory Eqpt	AC 44-5	AC 44-5	AC 44-5
Alternate	AL A7 or AR8, Champ J-8		
Spark Plug Gap	.025"	.025"	.025"
Breaker Gap	.016"	.016"	.016"
Cam Angle	21° to 30°	21° to 30°	21° to 30°
Firing Order	1-5-3-6-2-4	1-6-2-5-8-3-7-4	
Timing—Crankshaft Degrees	3° BTC	3° BTC (4)	3° BTC (4)
Adv Deg—Centrif—Vac	22-24 (5)	22-22	22-22
Adv Begins—Ends—Eng rpm	600-3900 (5)	500-3850	500-3850
Battery—Volts, Terminal Ground	6, Negative	6, Negative	6, Negative
VALVES			
Make and Material Int	Rich V Steel or TP 3140 or 8440		
Exh	Rich 2112 or TP Sil XB		
Tappet Clr—Seat Angle Int	.011" to .013" H, 30°		
Exh	.011" to .013" H, 45°		
Exhaust Seat Inserts	None	None	None
CARBURETOR			
Make, Model	Car WCD-2010-S	Car WCD-2122-S	
Type	Dual DD	Dual DD	Dual DD
Float Level	5/32" (6)	3/16" (6)	3/16" (6)
Choke Control	Automatic	Automatic	Automatic
CAPACITY			
Oil (qt)	5 Refill	5 Refill	5 Refill
Water (qt)	18.3 (7)	18.8 (7)	18.8 (7)
Transmission (pt)	1-3/4 (8)	1-3/4 (8)	1-3/4 (8)
Rear Axle (pt)	3-1/4	3-1/4	3-1/4
Gasoline (gal)	20 (9)	20 (9)	20 (9)
GENERAL DATA (Four-Door Sedan)			
Wheelbase (in)	122	122	124
Over All Lgth Incl Bumpers (in)	202-2/3	202-2/3	213-2/3
Shipping Weight (lb)	3391 (10)	3451 (10)	3536 (10)
Tire Size—Recm Press (lb)	7.10x15-24-24 (11)		
Rear Axle Ratio—Type	3.08 Hyp	3.08 Hyp	3.23 Hyp
LOCATION CHASSIS SERIAL NO.	Left Front Pillar Post		

(1) Power data given for 7.7 compression ratio which is standard on all Hydra-Matic equipped cars.
(2) 7.0 compression ratio standard with Synchro-Mesh transmission.
(3) 6.8 compression ratio standard with Synchro-Mesh transmission.
(4) 6° BTC with 6.8 compression ratio.
(5) Data shown for 7.7 compression ratio. For 7.0 advance begins @ 800 rpm—maximum centrifugal is 23° @ 3600 rpm—maximum vacuum advance 24°.
(6) Bowl cover to seam of float with bowl cover assembly inverted.
(7) 1.8 quarts additional with heater.
(8) Hydra-Matic transmission requires 11 quarts for refill.
(9) 16 gallons capacity for station wagon.
(10) 120 pounds additional when equipped with Hydra-Matic transmission.
(11) 7.60x15 tires optional.

CAR MODEL	Champion 15G	Commander 5H	Land Cruiser 5HY
ENGINE			
No. Cyl-Head Type	6-L	V-8-I	V-8-I
Bore and Stroke (in)	3x4	3-3/8x3-1/4	3-3/8x3-1/4
Displacement (cu in)	169.6	232.6	232.6
AMA Horsepower	21.6	36.4	36.4
Max Horsepower @ rpm	85 @ 4000	127 @ 4000	127 @ 4000
Max Torque, lb-ft @ rpm	138 @ 2400	202 @ 2000	202 @ 2000
Max bmep, lb/sq in	122.8	130.8	130.8
Head Material	Cast Iron	Cast Iron	Cast Iron
Compression Ratio	7.5	7.5	7.5
Piston Material	AA	AA	AA
Bearing Material	Steel Backed Babbitt Lined		
IGNITION			
Spark Plug—Factory Eqpt	Champ J-7	Champ H-11	Champ H-11
Alternate	AC 44, AL A5	AC 45L, AL AL7	
Spark Plug Gap	.020"	.035"	.035"
Breaker Gap	.020"	.013"	.013"
Cam Angle	38° to 40°	28° to 34°	28° to 34°
Firing Order	1-5-3-6-2-4	1-8-4-3-6-5-7-2	
Timing—Crankshaft Degrees	2° BTC	4° BTC	4° BTC
Adv Deg—Centrif—Vac	14-18	32-16	32-16
Adv Begins—Ends—Eng rpm	800-2800	600-2900	600-2900
Battery—Volts, Terminal Ground	6, Positive	6, Positive	6, Positive
VALVES			
Make and Material Int	Rich or Eaton Chrome Nickel Steel		
Exh	2112	2112N	2112N
Tappet Clr—Seat Angle Int	.016" C, 45°	.021" to .023" H, 45°	
Exh	.016" C, 45°	.021" to .023" H, 45°	
Exhaust Seat Inserts	None	None	None
CARBURETOR			
Make, Model	Car WE2108S(1)	Strom WW	Strom WW
Type	Sgl DD	Dual DD	Dual DD
Float Level	3/8 (2)	(3)	(3)
Choke Control	Automatic	Automatic	Automatic
CAPACITY			
Oil (qt)	5 Refill	6 Refill	6 Refill
Water (qt)	10	17-1/4	17-1/4
Transmission (pt)	1.6 (4)	2.4 (4)	2.4 (4)
Rear Axle (pt)	2-1/2	3	3
Gasoline (gal)	18	18	18
GENERAL DATA (Four-Door Sedan)			
Wheelbase (in)	116-1/2 (5)	116-1/2 (5)	120-1/2
Over All Lgth Incl Bumpers (in)	198-5/8	198-5/8	202-5/8
Shipping Weight (lb)	2765	3105	3180
Tire Size—Recm Press (lb)	6.40x15-26-24	7.10x15-26-22	
Rear Axle Ratio—Type	4.1 Hyp (6)	4.09 (7)	4.09 (7)
LOCATION CHASSIS SERIAL NO.	Left Front Door Hinge Pillar Post		

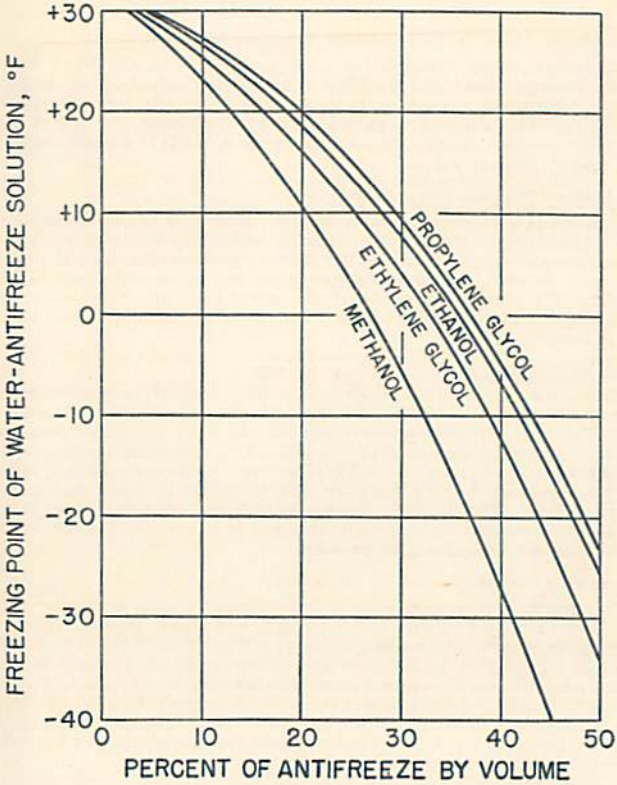
(1) Car WE989S on early production cars.
(2) Between boss on bowl cover and far edge of float seam.
(3) Place float level gage J-5475 on carburetor body across center of float while holding the float lip firmly against the needle valve.
(4) 2.75 with overdrive on Champion, 3.4 with overdrive on V-8's. Automatic transmission requires 9.5 quarts.
(5) 120-1/2 wheelbase for all 2-door coupes, including hardtops.
(6) 4.56 with overdrive, 4.1 with automatic transmission.
(7) 4.27 with overdrive, 3.54 with automatic transmission.

WILLYS

CAR MODEL	685B	6-226
ENGINE		
No. Cyl-Head Type	6-F	6-L
Bore and Stroke (in)	3-1/8x3-1/2	3-5/16x4-3/8
Displacement (cu in)	161.0	226.2
AMA Horsepower	23.44	26.33
Max Horsepower @ rpm	90 @ 4200	115 @ 3650
Max Torque, lb-ft @ rpm	135 @ 2000	190 @ 1800
Max bmep, lb/sq in	126.4	126.6
Head Material	Cast Iron	Cast Iron
Compression Ratio	7.6	7.3
Piston Material	AA	AA
Bearing Material	Steel Shell, Babbitt Lined	
IGNITION		
Spark Plug—Factory Eqpt	Champ J-8	Champ J-8
Alternate	AC-45, AL A7	AC-45, AL A7
Spark Plug Gap	.030"	.030"
Breaker Gap	.020"	.020"
Cam Angle	39°±3	39°±3
Firing Order	1-5-3-6-2-4	1-5-3-6-2-4
Timing—Crankshaft Degrees	5°BTC	5°BTC
Adv Deg—Centrif—Vac	19-12	18-12
Adv Begins—Ends—Eng rpm	600-2600	600-3350
Battery-Volts, Terminal Ground	6, Negative	6, Negative
VALVES		
Make and Material Int	AISI 5150	Sil No. 1
Exh	Various 2112	Stainless Steel 2112
Tappet Clr—Seat Angle Int	.018"C, 45°	.014"C, 30°
Exh	.016"C, 45°	.014"C, 45°
Exhaust Seat Inserts	None	None
CARBURETOR		
Make, Model	Carter 2071F	Carter WGD
Type	1-1/4" Sgl DD	Dual DD
Float Level	9/32" (1)	1/4" (1)
Choke Control	Manual	Automatic
CAPACITY		
Oil (qt)	5	5
Water (qt)	11	13 (2)
Transmission (pt)	1-1/2 (3)	2-1/2
Rear Axle (pt)	2-1/2	2-1/2
Gasoline (gal)	18	18
GENERAL DATA (Four-Door Sedan)		
Wheelbase (in)	108	108
Over All Lgth Incl Bumpers (in)	180-7/8	183
Shipping Weight (lb)	2588	2778 (4)
Tire Size—Recm Press (lb)	6.40x15-24-24	6.40x15
Rear Axle Ratio—Type	4.1 Hyp (5)	4.1 Hyp (5)
LOCATION CHASSIS SERIAL NO.	Left Front Door Pillar	

(1) From top of float to bottom surface of float bowl cover without gasket.
(2) One quart additional with heater.
(3) 3/4 pint additional with overdrive.
(4) Ace, four-door sedan, standard transmission.
(5) Overdrive. 3.54 conventional transmission. 3.31 automatic transmission.

FREEZING POINTS OF WATER-ANTIFREEZE SOLUTIONS



AUTOMATIC AND SEMI-AUTOMATIC TRANSMISSIONS

Overdrive (Borg Warner Corporation)

Available on DeSoto, Dodge, Ford, Hudson, Henry J, Kaiser, Mercury, Nash, Packard, Plymouth, Studebaker and Willys. It consists of a planetary gearset and one-way clutch used behind a conventional three-speed transmission. The shift is controlled electrically according to car speed and is actuated by the accelerator. The driving ratio reduction is 30%.

Hydra-Matic (Detroit Transmission Division GMC)

Available on Cadillac, Hudson Jet models, Kaiser, Lincoln, Nash, Oldsmobile, Pontiac and Willys. This transmission consists of a fluid coupling with three planetary gearsets providing four forward speeds and reverse. The shifts are automatic and vary with car speed and accelerator position. Ratios are as follows: first, 3.82:1; second, 2.63:1; third, 1.45:1; fourth, 1:1.

Gyro-Matic (Chrysler Corporation)

Used on Dodge. It consists of a semi-automatic four-speed constant-mesh transmission with a fluid coupling and a dry-disc clutch. Either of two forward ranges are selected manually when the foot clutch is disengaged. Shifting between the two ratios in each speed range is controlled by the accelerator pedal at the driver's option at speeds above governor speed. Ratios are as follows: first, 3.57:1; second, 2.04:1; third, 1.75:1; fourth, 1:1.

Dynaflow (Buick)

The Dynaflow transmission consists of a four-element torque converter and a multiple pinion planetary gearset providing low and reverse ratios. The two turbine elements of the converter are interconnected through a planetary gearset of 1.6:1 ratio. The maximum torque multiplication of the converter is 2.45:1 and no additional gearing, other than the internal gearing between the turbines, is used for normal forward driving. The drive is always through the converter. Low range 1.82:1 gear ratio can be manually engaged at any throttle position for extra pulling power and engine braking.

Ultramatic (Packard)

This transmission is composed of a four-element torque converter (one pump, two turbine members and a stator), a multiple pinion planetary transmission to provide low and reverse, and a direct drive clutch. The maximum torque multiplication of the converter is 2.4:1 and it is used only for accelerating. The direct drive clutch locks the pump and turbine together into a solid drive for part throttle operation. The shift to direct drive is controlled automatically by the car speed and accelerator position. Low range (1.82:1 gear ratio) can be manually engaged for extra power or engine braking.

Powerglide (Chevrolet)

This transmission consists of a three-element torque converter with a multiple pinion planetary gearset providing low and reverse ratios. The drive is always through the converter which has a maximum torque multiplication of 2.1:1. Normal drive starts through the torque con-

verter and low gear ratio (1.82:1) and automatically shifts to converter only, depending on throttle opening and car speed. The transmission can be manually locked in low range for extra pulling power and engine braking.

Studebaker Automatic Transmission

This transmission has a three-element torque converter, a direct drive clutch and two planetary gearsets providing three forward speeds and reverse. In the six-cylinder model cars normal drive starts through the torque converter in low gear, shifts to intermediate gear ratio and torque converter and then shifts to solid direct drive depending on car speed and throttle opening. In the V-8 models the drive starts through the torque converter in intermediate gear and shifts to solid direct drive. Low range can be manually engaged for extra pulling power or engine braking. The torque converter has a maximum ratio of 2.15 and the gear ratios are as follows: first, 2.31:1; second, 1.43:1; third, 1:1.

Fordomatic and Merc-O-Matic (Ford and Mercury)

This transmission is composed of a three-element torque converter and a multiple pinion planetary gear system to produce three forward speeds and reverse. The drive is always through the converter which has a maximum torque multiplication of 2.1:1. Normal drive starts through the torque converter and intermediate gear ratio (1.48:1) and automatically shifts to converter only, depending on throttle opening and car speed. Low range (2.44:1 gear ratio) can be manually engaged for extra pulling power or engine braking.

Hy-Drive (Chrysler Corporation)

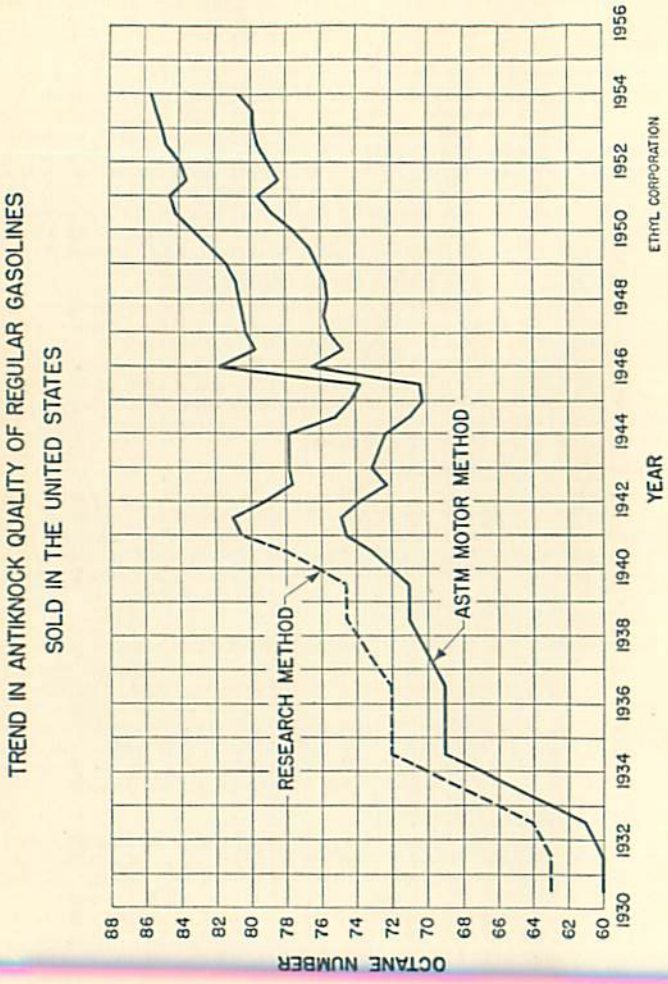
This transmission is used on the Plymouth. It consists of a four-element torque converter with a constant-mesh three-speed transmission. The torque converter has a maximum torque multiplication of 2.6:1 and the drive is always through the converter. Ratios used in this transmission with the torque converter are: first, 2.37:1; second, 1.68:1; third, 1:1.

PowerFlite (Chrysler Corporation)

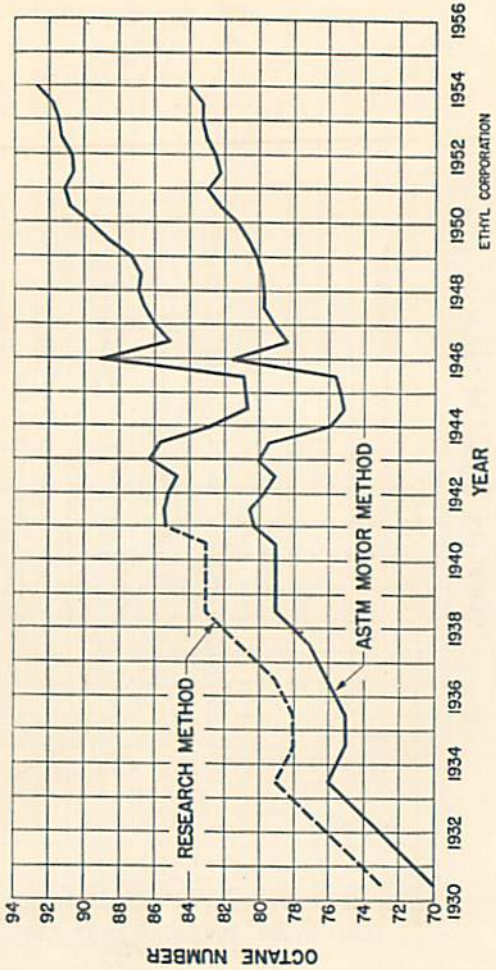
This transmission is used on Chrysler, DeSoto and Dodge in both V-8 and six-cylinder cars. It consists of a four-element torque converter and two planetary gearsets providing low and reverse ratios. The drive is always through the converter which has a maximum torque multiplication of 2.6:1. Normal drive starts through the torque converter and low gear ratio (1.72:1) and automatically shifts to converter only, depending on throttle opening and car speed. The transmission can be manually locked in low range for extra pulling power and engine braking.

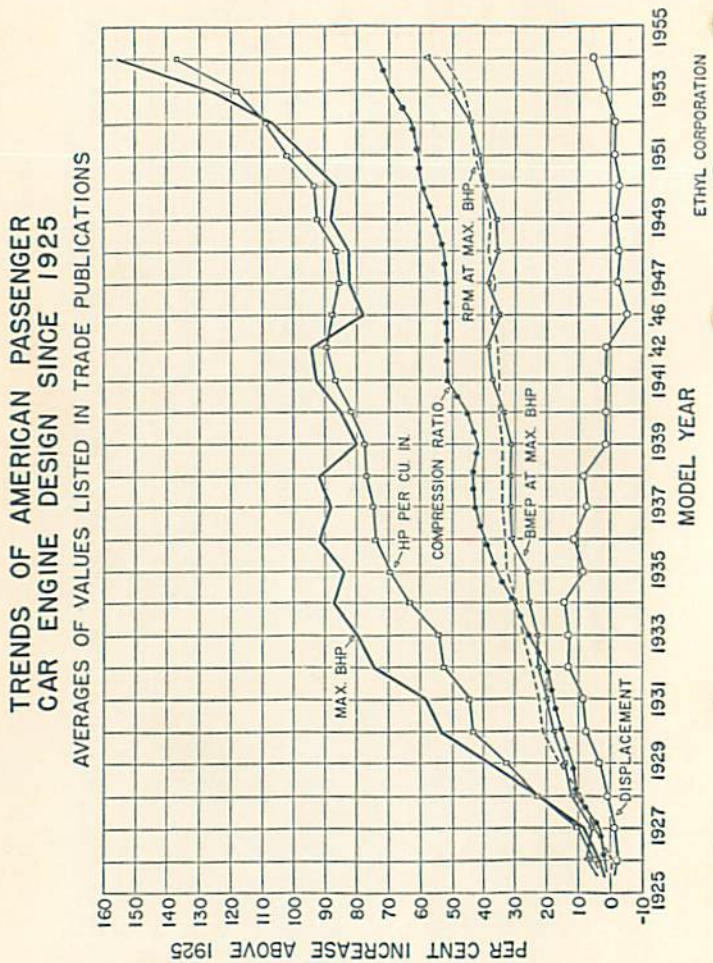
Hudson Automatic Transmission

This transmission which is used on Hudson Wasp and Hornet models has a three-element torque converter, a direct drive clutch and two planetary gearsets providing three forward speeds and reverse. Normal drive starts through the torque converter in low gear, shifts to intermediate gear ratio and torque converter, and then shifts to solid direct drive, depending on car speed and throttle opening. Low range can be manually engaged for extra pulling power or engine braking. The torque converter has a maximum ratio of 2.1:1. The gear ratios are as follows: first, 2.31:1; second, 1.44:1; third, 1:1.


TREND IN ANTIKNOCK QUALITY OF REGULAR GASOLINES
SOLD IN THE UNITED STATES
RESEARCH METHOD
ASTM MOTOR METHOD
OCTANE NUMBER
88
86
84
82
80
78
76
74
72
70
68
66
64
62
60
1930
1932
1934
1936
1938
1940
1942
1944
1946
1948
1950
1952
1954
1956
YEAR
ETHYL CORPORATION

TREND IN ANTIKNOCK QUALITY OF PREMIUM GASOLINES SOLD IN THE UNITED STATES




TRENDS OF AMERICAN PASSENGER
CAR ENGINE DESIGN SINCE 1925
AVERAGES OF VALUES LISTED IN TRADE PUBLICATIONS
MAX. BHP
HP PER CU. IN.
COMPRESSION RATIO
RPM AT MAX. BHP
BMEP AT MAX. BHP
DISPLACEMENT
PER CENT INCREASE ABOVE 1925
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
-10
1925
1927
1929
1931
1933
1935
1937
1939
1941
'42
'46
1947
1949
1951
1953
1955
MODEL YEAR
ETHYL CORPORATION